Developmental biology of the tiger moth, Atteva sciodoxa Meyrick (Lepidoptera: Yponomeutidae) under laboratory conditions

ABSTRACT

The tiger moth, Atteva sciodoxa is a serious pest of tongkat Ali, Eurycoma longifolia. The morphology, development times and fecundity aspects were studied at 27±2°C, 90±5% relative humidity and 12 h photoperiod. The eggs were yellow and ovoid in shape with a mean length and width of 1.19±0.02 and 0.86±0.02 mm, respectively. Width measurements of larval head capsules showed that A. sciodoxa undergoes five larval instar stages. The mean head capsule widths of the first to fifth instar larvae were 0.55±0.01, 0.89±0.01, 1.23±0.02, 1.52±0.01 and 2.11±0.02 mm, while the body lengths were 4.71±0.1, 8.63±0.1, 12.87±0.1, 16.29±0.1 and 21.74±0.2 mm, respectively. The mean male and female pupal body lengths were 10.36±0.1 and 11.26±0.2 mm, respectively. The mean male and female wing span were 21.63±0.2 and 24.28±0.2 mm, respectively. The mean pre-oviposition and oviposition periods were 6.2±0.23 and 8.5±0.28 days, respectively. A single female laid on average 106.1±4.85 eggs with maximum production between days 8-15 of adult emergence. The maximum number of eggs laid per female per day was 20.1±0.5. The mean hatching time was 5.7±0.1 days with a mean hatchability of 81.1±0.6%. The mean larval, pupal and adult periods were 20.7±0.2, 6.2±0.8 and 13.2±0.5 days, respectively. The female pupal period and adult lifespan were significantly longer than the male. Atteva sciodoxa completed its life cycle in 46.28±0.49 days.

Keyword: Atteva sciodoxa, Development, Eurycoma longifalia, Tongkat Ali